

The Alien Aquatic Species Problem

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IS 300: Field Study

Abstract

Alien aquatic species is important issue, which has been slowly eating away at or economy and ecosystem. A bill (HB 2667) had been brought to the attention of the 2002 Legislature dealing with the growing problems of invasive aquatic species by the Hawaii Audubon Society. There were some signs of life and promise... But in the end, the bill perished along with the hopes of controlling the introduction and eradication of alien aquatic species. Is there a possible strategy for the next session of the Legislature, which could be more successful?

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Introduction

Alien Aquatic Species Problem

Human actions are primary means of invasive species introductions. Many species ranges fluctuate naturally on a time scale of centuries to years as a result of alterations in climate or biological interactions. Human-mediated movement of species has been significantly accelerated in recent decades. Thus, alien species is any species intentionally or accidentally transported by man into a habitat outside its native geographical range; otherwise it could not be able to overcome environmental barriers (ocean waters, land massifs) separating region of origin from new 'locale.' Alien aquatic species are an invasive (exotic, introduced, non-indigenous, non-native) species. An "invasive species" is defined as a species that is 1) non-native (or alien) to the ecosystem under consideration and 2) whose introduction causes or is likely to cause economic or environmental (natural resources in the ecosystem) harm or harm to human health. Invasive species can be plants, animals, and other organisms (eg., microbes).

These human-mediated invasions often referred to as "biological pollution," represent a growing problem due to the unexpected and unwanted impacts the nuisance species might cause to the environment, economy, and human health. Effects of alien aquatic species on marine environment and native biodiversity are numerous. They include changes in resource competition (food, space, spawning areas); physical changes in habitat (reduced water movement, biogenic erosion of shores, alteration of bottom substrate); limitation of resources (nutrients, light, oxygen); detrimental changes in the trophic web due to introduction of a new functional group; harmful algal blooms; genetic effects on native species (hybridization, changes in gene pool, loss of native genotypes); drastic reduction of the population size or even extinction of native species.

Environmental changes induced by biological invasions also cause economic impacts as well. For instance: invasive species can compete with and reduce commercial fish stocks; toxic blooms can affect aquaculture, erosion of shores can harm coastal installations. Invasive species may also directly effect: water abstraction (clogging of water intake pipes); aquatic transport (fouling of boats, buoys, etc., including costs of cleaning and antifouling painting, which, in turn, harms the environment); tourism (massive accumulation on shores causing smell, discoloring of water, sharp shells); fisheries (clogging and fouling of fishing gears, damage of catches in nets); aquaculture (fouling of lines, cages, cultured mollusks, fish kills, etc.); as well as human health (newly brought infections, toxins in wild-harvested fish and shellfish, new intermediate hosts for human parasites, etc.).

Alien aquatic species are mostly transported intentionally for stocking and aquaculture purposes or unintentionally with interregional and intercontinental shipping. The importance of ship transportation in the spread of invasive species has increased tremendously in recent time. Vessels provide habitats for a large variety of organisms, from viruses and microorganisms to various plants and animals, due to their transport of ballast water, sediments in tanks, and hull fouling. Other vectors of unintentional introductions are accidental releases from public and research aquariums; transport of parasites and other unwanted organisms with target aquaculture objects; penetration of alien species via canals, etc. Aquatic alien species tend to concentrate in coastal regions (estuaries, coastal lagoons, harbor areas). The likelihood of an introduced species settling in new areas and creating problems depends on a number of factors. These are primary related to the biological characteristics of the species and the environmental conditions to which the species has been introduced, including the properties of the invaded ecological community. Additional factors are climate, number of introduced specimens (size of founder population),

native competitors, and the availability of food as well as potential predators/grazers, or disease agents.

Scope of Topic

Sometimes it just seems so difficult, Mother Nature cries out for help, and all we do is sit on our bottoms and watch her slowly perish away. If Earth Day is just one day, what are all the other days? Like nature itself, the size and shape of the environmental problems are constantly evolving. I want to do something, but where do I start? I believe we have to start from the top and work our way down. Thomas Jefferson once said more than two hundred years ago, "That every generation reinvents the institutions of society to serve its own needs." And two hundred years later, what is at the top of our society, the United States government and its body of law. A law first starts with an idea, a moment of brilliance, but how does this idea become a law written in stone? Utilizing the trickle down theory, trying to convince the government to promote marine conservation, and establish and enforce the bounds of acceptable environmental behavior; policy makers, as well as commercial interests, individual resource users, and the public at large need to come to terms with the reality that oceans are both a resource to be used and an environment to be protected. It starts with the premise that the flurry of environmental activity, which emerged in the late 1960s and resulted in the enactment of a broad range of federal environmental laws in the 1970s, moved us forward considerably. But the prospects for further progress on the same path are limited.

Two years ago the Legislature passed a Bill, HB 1949, which designated the Department of Land and Natural Resources as the lead state agency for preventing the introduction and carrying out the destruction of alien aquatic organisms through the regulation of ballasts water discharges and hull fouling organisms. However, it did not address the problem of alien aquatic

organisms that enter Hawaii by other avenues. The Department of Land and Natural Resources has primary responsibility for eradicating invasive alien species from natural aquatic and terrestrial ecosystems, but little, if any, control over their intentional introduction into the State. The Department of Agriculture has primary control over intentional introductions of alien aquatic species into the State, but little, if any, responsibility for eradicating these species from Hawaii's natural aquatic and terrestrial ecosystem once they have escaped into the environment.

I will be doing my research project on new proposals with some aspects of marine concerns brought up by NGOs for the 2002 legislation. I want to focus upon the NGO and one new proposal it introduces for the 2002 Hawaii State Legislature: from the birth of the idea, to creating and writing of it on paper (or drafting), to the lobbying, voting in the legislation, and finally being enacted. I will be using previous years, successes and failures of propaganda brought in light of legislation years past, what went right and what went wrong.

One of the most pressing threats to ocean health is introduction of alien species. The Hawaii Audubon Society has created a bill relating to invasive aquatic organisms. These animals and plants are potentially harmful to both the environment and economy of the State when they escape and become established in the environment. Once the alien species has established itself into Hawaii's ecosystems, control is difficult and expensive and complete eradication is most often impossible.

The project is important to me, because all these old, as well as new, proposals by the NGOs from the years past and for the upcoming years will affect and have affected the future of our environment and ocean, as well as us. The regulatory reform must be viewed as a process, not an endpoint. A start to the future of thinking ecologically. I hope to learn the process of how legislation is made and how it goes through the Hawaii system. I want to be able to have a

feeling of accomplishment, to know I have completed something, and have done some part in helping out the environment as well as world as a whole, if it is so little and small.

Methods and Material

My research project is about new proposals brought by NGOs for the 2002 Hawaii State Legislature. The NGO I have contacted is the Hawaii Audubon Society (my mentor Linda Paul), and followed a bill relating to invasive aquatic organisms, HB 2667 Relating to Invasive Aquatic Organisms. I achieved the project and learning objectives I have set out by, taking an active role with the NGO that is introducing the bill. I kept updated as the current issue is debated through different types of media (newspaper, internet, television, etc.). I followed how the proposal was first an idea, and then went through the process of becoming a bill. I did research on the topic at hand, and what impacts it may have in the future of the ocean's environment. The project was carried out by standard note-taking and an analysis (why things were done). I want to do my part to help save the environment.

Timetable for my project is: Prefiling of Bills Begins: Jan 9

Opening Day: Jan 16

Bill Intro Cutoff: Jan 25

1st Decking: Mar 1

1st Crossover: Mar 7

2nd Decking: Apr 5

2nd Crossover- (Bills) & Disagree: Apr 11

Final Decking: Apr 25 & 26

2nd Crossover (Conc. Resos): Apr 22

Adjournment Sine Die: May 2

The resources I will need are: paper, pencils, computer and access to the Internet, gas (to drive), and myself

Results

Hawaii State Legislature Bill Status

HB2667

Measure Title: RELATING TO INVASIVE AQUATIC ORGANISMS.

Report Title: DLNR; Invasive Species (\$)

Description: Provides an appropriation for one position in the division of aquatic resources to develop a comprehensive plan to prevent the intentional introduction of potentially invasive aquatic organisms into the State.

Package: None

Companion:

Introducer(s): KANOHO

Current Referral: EEP, FIN

Date		Status Text
1/25/02	H	Introduced
1/25/02	H	Pass First Reading
1/30/02	H	Referred to EEP, FIN, referral sheet 5.
2/9/02	H	Bill scheduled to be heard by EEP on Tuesday, 02-12-02 at 9:00 am in House conference room 312.
2/12/02	H	The committees on EEP recommend that the measure be PASSED, UNAMENDED. The votes were as follows: 8 Ayes: Representative(s) Morita, Schatz, Ito, B. Oshiro, Bukoski, Jaffe, Thielen; Ayes with reservations: Representative(s) Meyer; 1 Noes: Representative(s) Hale; and 1 Excused: Representative(s) Kanoho.
2/14/02	H	Reported from the committee on EEP (Stand. Com. Rep. No. 252-02), recommending passage on Second Reading and referral to the committee on FIN.
2/14/02	H	Passed Second Reading and referred to the committee(s) on FIN with none voting no and Representative(s) Arakaki, Bukoski, Kahikina, Souki excused.

\$ = Appropriation measure

ConAm = Constitutional Amendment

The Hawaii Audubon Society first drafted a Bill dealing with the problem of alien aquatic species on January 21, 2002, 'A Bill For An Act Relating To Invasive Aquatic Organisms' (See Appendix 1), and it was given to House Representative Kanoho, part of the Committee of Water and Land Use. The document was 'finetuned', looked over by Rep. Kanoho and introduced to the Hawaii State Legislature January 25th, 2002. The Bill was introduced to the House of Representatives, and was named House Bill 2667 (HB 2667), the Report Title: DLNR; Invasive Species, the Description: Provides an appropriation for one position in the division of aquatic resources to develop a comprehensive plan to prevent the intentional introduction of potentially invasive aquatic organisms into the State, 'A Bill For An Act Relating To Invasive Aquatic Organisms' (See Appendix 2).

The Bill HB 2667 passed its first hearing, January 25th, 2002, and later (January 30th, 2002) referred to the House Committee on Energy and Environmental Protection (EEP) and Committee on Finance (FIN). The Bill was scheduled to be heard by the EEP February 9th, 2002, and the Committees on EEP recommended that the measure be passed unamended on February 12th, 2002. Attached to HB 2667 was a petition written to the EEP in favor of the Bill, and a general description why Hawaii needs a Bill relating to invasive aquatic organisms (See Appendix 3). The Bill HB 2667 was then referred to Committee on FIN February 14th, 2002, where the Bill died. The Bill was not heard by the FIN because it asked for funding for a new position for an algal specialist in the Division of Aquatics in DLNR and there are no funds available.

As you know from the newspapers, the State had to cut positions because of the problem of the economy. Linda Paul, Executive Director for Aquatics for the Hawaii Audubon Society

had been trying to get some broader language covering both aquatic terrestrial species into Senate Bill 2971 (SB 2971) and House Bill 2212 (HB 2212) (Companion Bills), which would call on DLNR and the Department of Agriculture to get together and come up with a plan to prevent the intentional introductions of potentially invasive species from getting into the State. Linda Paul sent a testimony to the EEP, attached was the suggested language for SB 2971 (See Appendix 4).

Both Bills SB 2971 (See Appendix 5) and HB 2212 (See Appendix 6), relate to alien invasive species in general, with no specific parameter. The bills provides the administrative mechanism to address this concern by establishing and authorizing an alien species administrator/coordinator to assign lead responsibility for specific invasive species to specific departments, to control and eradicate alien invasive species. The Bill SB 2971 died March 22nd, 2002. While the Bill HB 2212 passed in both the House of Representatives and Senate and was transmitted to the Governor May 8th, 2002.

Discussion

There is not really anything you can do unless you have the funds to back up your proposal. Our economy has been in a spiral downwards, and there have not been enough funds to distribute to all the open hands needed to create new laws. The only way some topics, such as 'alien aquatic species' can be heard is through companion or rider bills, which will be connected or attached to another bill. The cause is, no money, the effect is, no bill. My conclusion is that the legislative process let us down, and it is out of our control until the next legislative session. Invasive species is an important issue, which is causing the State to lose money and destroying our ecosystem. We must do something soon or the problem will impossible to stop. My recommendation is to some how show the effects/cost of invasive species to the State. The only way anything can get done, is to see how much the State loses.

Evaluation of Learning

The project has been a difficult process, because it has changed and took many different forms. It will change in the future (an ever evolving project) and that nothing is set. The whole process of introducing a bill, to how it becomes a law, changes the original idea of the bill. The legislative process is confusing; bills bounce back and forth between House and Senate, and are amended, and re-amended. In the short legislative year, many bills from different organization are brought up to the House of Representatives and Senate to be heard and try to become a law. But with my experience through my project, not many do. But still we, as well as many others will, bring up their ideas to the Legislature with the hope of creating a difference, and to see a bill become a law.

The alien aquatic species is a big problem in Hawaii and we need something done to stop the influx of more invasive species to the State. Over 340 alien marine, brackish, and fresh water species have already established themselves in Hawaii's aquatic ecosystem. The invasive organisms are displacing the native species, altering the ecosystems and habitat, and causing economic damage. Once invasive alien species escape into Hawaii's aquatic and terrestrial ecosystems, control is difficult and expensive, and complete eradication is probably impossible. It is far cheaper to stop the introduction of alien species into Hawaii's ecosystem, than it is to clean them up once they become established. Often an organism may look economically promising, but in the long run may cost millions to clean up if it gets loose.

The Hawaii Audubon Society is a non-profit organization dedicated to the protection of Hawaii's wildlife. They work to have important conservation laws passed. And encourage the U.S. government to protect vital wildlife areas by including them in a National Wildlife Refuge.

I do like to work alone but do need close supervision to help direct me from one point to the next. And definitely need to work on my time management. I do see the end of the tunnel but need help along the way to get there. I can deal when 'things don't go exactly as planned' because my whole project did not happen the way I wanted it, but I did finish it. I do prefer to learn from first hand experience, it basically thought me that I have to work harder and put more effort when things are not going as planned. I do need to focus better and push myself to strive further and take that extra step.

Acknowledgments

I would like to thank Sherwood Maynard for all the help he has given me; guiding me throughout the semester, inspired me to do this project, and helping me put this project together. I would also like to thank Linda Paul, thank you for all the help you have given to me, keeping me inform, helping me understand, and be able to accomplish this project.

References

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- Carlton, J. T., 1996. Biological invasions and cryptogenic species. *Ecology* 77(6): 1653-1655.
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- Pimentel D., L. Lach, R. Zuniga, D. Morrisson, 2000. Environmental and Economic Costs of Nonindigenous Species in the United States. *BioScience* 50(1): 53-65.

Appendix 1:
Draft of Bill Created by Hawaii Audubon Society
Given to Rep Kanoho

TWENTY-FIRST LEGISLATURE,
2002
STATE OF HAWAII

A BILL FOR AN ACT
RELATING TO INVASIVE AQUATIC ORGANISMS.
BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF HAWAII:

SECTION 1. The legislature finds that many intentional introductions of invasive aquatic plants and animals, as well as invasive terrestrial plants and animals, are potentially harmful to both the environment and economy of the State when they escape and become established in the environment. These organisms enter the State through a variety of means including aquarium, aquaculture, and nursery imports, personal packages and baggage, bait tanks and bait wells, and so forth. In Hawaii, more than 150 invasive marine, brackish, and fresh water species, intentionally and unintentionally introduced into Hawaii's aquatic ecosystems, have already become established, displacing native species, altering ecosystems and habitat, and causing economic damage. Once invasive aquatic organisms escape into Hawaii's ecosystems, control is difficult and expensive and complete eradication is most often impossible. Therefore the ideal solution is to prevent their introduction.

Act 134, Session Laws of Hawaii (SLH) 2000, designated the department of land and natural resources (DLNR) as the lead agency to:

- (1) Prevent the introduction of alien aquatic organisms into Hawaii's environment; and
- (2) Carry out the destruction of alien aquatic organisms through the regulation of ballast water discharges and hull fouling organisms.

This law further directed DLNR to adopt rules in accordance with chapter 91, Hawaii Revised Statutes, including penalties, to carry out these duties.

In addition, Act 256, SLH 1993, amended by Act 195, SLH 1999, prohibited the release of any live non-native aquatic life being held in an aquarium or other confinement for any purpose into any waters of the State, except for state propagation and dissemination purposes. It also authorized DLNR to seize, confiscate, or destroy as a public nuisance any prohibited or restricted aquatic life found in any waters of the State.

However, neither Act 134 nor Act 256 expressly directed DLNR to adopt rules and penalties to prevent the introduction of alien aquatic organisms into Hawaii's aquatic ecosystems that might enter the state through other avenues.

In addition, while DLNR has primary responsibility for eradicating invasive alien organisms from natural aquatic and terrestrial ecosystems, it has little, if any, control over their intentional introduction into the State.

Conversely, the department of agriculture (DOA) has primary control over intentional introductions of alien organisms into the State, but little, if any, responsibility for eradicating these organisms from Hawaii's natural aquatic and terrestrial ecosystems once they have escaped into the environment and become invasive.

The purpose of this Act is to direct state agencies to initiate discussions to develop a comprehensive plan to prevent the intentional introduction of potentially invasive aquatic organisms.

SECTION 2. (a) The chairperson of the board of land and natural resources shall establish an invasive aquatic organism task force consisting of the chairperson or designee and at least one representative from each of the following:

- (1) The department of agriculture;
 - (2) The department of health;
 - (3) The University of Hawaii;
 - (4) The Bishop Museum;
 - (5) The United States Fish and Wildlife Service;
 - (6) The United States National Marine Fisheries Service;
 - (7) The commercial aquarium industry;
 - (8) The commercial aquaculture industry;
 - (9) The private or marine recreation industry;
 - (10) The environmental community; and
 - (11) Any other organization that the chairperson determines has an interest in the prevention of the introduction of invasive aquatic organisms.
- (b) The task force shall develop a comprehensive plan to prevent the introduction and dispersal of invasive aquatic organisms into Hawaii waters by:

- (1) Identifying the sources of previous introductions of alien aquatic organisms that have become invasive;
- (2) Determining the methods for notification and review of proposed introductions;
- (3) Determining preventative measures to minimize the risk of invasive aquatic species entering the state and becoming established in state waters;
- (4) Recommending monitoring programs to assess the effectiveness of these protocols and measures, both at the various ports of entry and elsewhere in the State's marine and fresh water environments;
- (5) Disseminating information relating to invasive aquatic organisms to the public;
- (6) Making recommendation of proposed changes needed in rules and statutes to accomplish these goals; and
- (7) Addressing any other matters of concern raised by the task force.

- (c) The task force shall submit a report setting forth its findings and recommendations to the legislature no later than twenty days prior to the 2003 regular session.
- (d) The invasive aquatic organism task force shall cease to exist on June 30, 2003.

SECTION 3. This Act shall take effect upon its approval.

INTRODUCED

BY: _____

Appendix 2
Bill Introduced to House of Representatives

Report Title:

DLNR; Invasive Species

Description:

Provides an appropriation for one position in the division of aquatic resources to develop a comprehensive plan to prevent the intentional introduction of potentially invasive aquatic organisms into the State.

HOUSE OF REPRESENTATIVES

H.B. NO. 2667

TWENTY-FIRST LEGISLATURE,
2002

STATE OF HAWAII

A BILL FOR AN ACT
RELATING TO INVASIVE AQUATIC ORGANISMS.

**BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF
HAWAII:**

SECTION 1. The legislature finds that many intentional introductions of invasive aquatic plants and animals, as well as invasive terrestrial plants and animals, are potentially harmful to both the environment and economy of the State when they escape and become established in the environment. These organisms enter the State through a variety of means including aquarium, aquaculture, and nursery imports, personal packages and baggage, bait tanks and bait wells, and in numerous other ways.

In Hawaii, more than three hundred forty invasive marine, brackish, and fresh water species, intentionally and unintentionally introduced into Hawaii's aquatic ecosystems, have already become established, displacing native species, altering ecosystems and habitat, and causing economic damage. Once invasive aquatic organisms escape into Hawaii's ecosystems, control is difficult and expensive and complete eradication is most often impossible. Therefore the ideal solution is to prevent their introduction.

Act 134, Session Laws of Hawaii 2000, designated the department of land and natural resources as the lead agency to:

- (1) Prevent the introduction of alien aquatic organisms into Hawaii's environment; and
- (2) Carry out the destruction of alien aquatic organisms through the regulation of ballast water discharges and hull fouling organisms.

The law further allowed the department of land and natural resources to "adopt rules in accordance with chapter 91 including penalties" to carry out the purpose of the Act. In addition, Act 256, Session Laws of Hawaii 1993, as amended by Act 195, Session Laws of Hawaii 1999, prohibited the release of any live non-native aquatic life held in an aquarium or other confinement for any purpose, into any waters of the State, except for state propagation and dissemination purposes. It also authorized the department of land and natural resources to seize, confiscate, or destroy as a public nuisance any prohibited or restricted aquatic life found in any waters of the State.

However, neither Act 134 nor Act 256 expressly directed the department of land and natural resources to adopt rules and penalties to prevent the introduction of alien aquatic organisms into Hawaii's aquatic ecosystems that might enter the State through other pathways.

In addition, while the department of land and natural resources has primary responsibility for eradicating invasive alien organisms from natural aquatic and terrestrial ecosystems, it has little, if any, control over their intentional introduction into the State.

Conversely, the department of agriculture has primary control over intentional introductions of alien organisms into the State, but little, if any, responsibility for eradicating these organisms from Hawaii's natural aquatic and terrestrial ecosystems once they have escaped into the environment and become invasive.

The purpose of this Act is to direct the department of land and natural resources to develop a comprehensive plan to prevent the intentional introduction of potentially invasive aquatic organisms.

SECTION 2. Notwithstanding any law to the contrary, the division of aquatic resources of the department of land and natural resources, shall develop a comprehensive plan to prevent the intentional introduction of potentially invasive aquatic organisms into the State.

The division shall develop the plan in the form of a report including any findings and recommendations and submit the report to the legislature twenty days prior to the convening of the regular session of 2003.

SECTION 3. There is appropriated out of the general revenues of the State of Hawaii, the sum of \$, or so much thereof as may be necessary for fiscal year 2002-2003, for one full-time position whose primary duty shall be to develop a comprehensive plan to prevent invasive aquatic organisms from entering into Hawaii. The division of aquatic resources shall determine the eligibility and qualifications for the position.

SECTION 4. The sum appropriated shall be expended by the department of land and natural resources for the purposes of this Act.

SECTION 5. This Act shall take effect on its approval; provided that section 3 shall take effect on July 1, 2002.

Appendix 3
Petition Written to the EEP
In Favor of HB 2667

ENERGY & ENVIRONMENT PROTECTION COMMITTEE

Representative Hermina Morita, Chair

Representative Brian Schatz, Vice Chair

HOUSE BILL NO. 2667

RELATING TO INVASIVE AQUATIC ORGANISMS

Tuesday, February 12, 2002

9:00 a.m. Conference Room 312, State Capitol

Representative Morita, Representative Schatz and members of the Committees, my name is _____ and I am/represent/speak for [organisation]. I am testifying in favor of HB 2667. Over 340 alien marine, brackish and fresh water species have already become established in Hawaii's aquatic ecosystems. These organisms are displacing native species, altering ecosystems and habitat, and causing economic damage. Two years ago the Legislature passed HB 1949, which designated the Department of Land & Natural Resources as the lead state agency for preventing the introduction and carrying out the destruction of alien aquatic organisms through the regulation of ballast water discharges and hull fouling organisms. However, it did not address the problem of alien aquatic organisms that enter Hawaii by other avenues. At least four out of the six alien seaweeds known to be causing serious problems on our reefs were originally brought in through research and aquaculture activities.

Examples of intentional introductions that were released or have escaped into Hawaii's aquatic environment include a red alga (*Kappaphycus*) from the Philippines, which is currently smothering corals in Kaneohe Bay; another alga (*Acanthophora sp.*), which is displacing native limu; the Tahitian prawn, which is now infesting all of our stream habitats; and numerous aquarium species, which have infested our streams with parasites.

The Department of Land and Natural Resources has primary responsibility for eradicating invasive alien species from natural aquatic and terrestrial ecosystems, but little, if any, control over their intentional introduction into the State. The Department of Agriculture has primary control over intentional introductions of alien species into the State, but little, if any, responsibility for eradicating these species from Hawaii's natural aquatic and terrestrial ecosystems once they have escaped into the environment.

Once invasive alien species escape into Hawaii's aquatic and terrestrial ecosystems, control is difficult and expensive, and complete eradication is probably impossible. It is far cheaper to stop the introduction of alien species into Hawaii's ecosystems, than it is to clean them up once they become established. Often an organism may look economically promising, but in the long run may cost millions to clean up if it gets loose. If there is any question regarding whether or not an aquatic species is likely to become invasive, the burden should be on the importer to conclusively prove that the proposed introduction cannot escape into the environment and become established. Because no one can as yet predict whether an alien algae can become established in Hawaii there should be no further permitting of algal imports.

The degradation of our streams and near-shore waters due to intentional and unintentional introductions of alien aquatic organisms impact Hawaii's economy in many ways in both the short and the long term. Invasive algae that smother coral and algal blooms that wash up on beaches threaten our \$11 billion per year tourism industry.

Department of Land and Natural Resources and the Department of Agriculture need to jointly agree on what safeguards need to be put into place to prevent additional intentional introductions of alien aquatic organisms likely to become invasive. Any further introductions should require the approval of both departments. We urge this committee to pass H.B. 2667 and help protect Hawaii's threatened aquatic ecosystems. Thank you for your consideration of this important matter.

Name

Address

Phone number

Appendix 4
Testimony to the EEP
From Linda Paul

ENERGY AND ENVIRONMENTAL PROTECTION COMMITTEE

Representative Hermina Morita, Chair
Representative Brian Schatz, Vice Chair

JUDICIARY AND HAWAIIAN AFFAIRS COMMITTEE

Representative Eric Hamakawa, Chair
Representative Blake Oshiro, Vice Chair

SENATE BILL NO. 2971 SD 2
RELATING TO ALIEN INVASIVE SPECIES
Tuesday, March 19, 2002
9:00 a.m. Conference Room 312, State Capitol

Representative Morita, Representative Hamakawa, and members of the Committees, my name is Linda Paul and I am the Executive Director for Aquatics for the Hawaii Audubon Society, the oldest conservation organization in Hawaii with over 1500 members. I am testifying in favor of SD 2971 SD 2, with some much-needed amendments. The bill as it is currently drafted does not adequately address the problem of preventing intentional introductions of potentially invasive alien species. Many alien species currently out of control were originally permitted to enter Hawaii because someone claimed that they had economic potential. They ended up costing the state enormous sums to eradicate, the most notorious example being miconia. At least four out of the six alien seaweeds known to be causing serious problems on our reefs were originally brought in through research and aquaculture activities. Over 4500 terrestrial and 340 alien marine, brackish and fresh water species have already become established in Hawaii's ecosystems. These organisms are displacing native species, altering ecosystems and habitat, and causing economic damage vastly out of proportion to any commercial value they may have once had.

The Department of Land and Natural Resources has primary responsibility for eradicating invasive alien species from natural aquatic and terrestrial ecosystems, but little, if any, control over their intentional introduction into the State. The Department of Agriculture has primary control over intentional introductions of alien species into the State, but little, if any, responsibility for eradicating these species from Hawaii's natural aquatic and terrestrial ecosystems once they have escaped into the environment.

Once invasive alien species escape into Hawaii's aquatic and terrestrial ecosystems, control is difficult and expensive, and complete eradication is probably impossible. It is far cheaper to stop the introduction of alien species into Hawaii's ecosystems than it is to clean them up once they become established. Often an organism may look economically promising, but in the long run may cost millions to clean up if it gets loose. If there is any question regarding whether or not an alien species is likely to become invasive, the burden should be on the importer to conclusively

prove that the proposed introduction cannot escape into the environment and become established. Because no one can as yet predict whether an alien algae can become established in Hawaii there should be no further permitting of algal imports.

The degradation of our forests, streams and near-shore waters due to intentional and unintentional introductions of invasive alien species impact Hawaii's economy in many ways in both the short and the long term. Invasive algae that smother coral and algal blooms that wash up on beaches threaten our \$11 billion per year tourism industry.

The Department of Land and Natural Resources and the Department of Agriculture need to jointly agree on what safeguards need to be put into place to prevent additional intentional introductions of alien aquatic organisms likely to become invasive. Any further introductions should require the approval of both departments, and a comprehensive plan needs to be developed. We urge this committee to pass S.B. 2971 SD2 with some much needed amendments, which I have appended to this testimony, and help protect Hawaii's threatened aquatic ecosystems. Thank you for your consideration of this important matter.

Appendix 5
Senate Bill 2971

Report Title:

Alien Invasive Species; State Administrator/Coordinator

Description:

Establishes a state invasive species administrator/coordinator and authorizes the departments of agriculture, health, and land and natural resources to enter private property to control alien invasive species. (SD2)

THE SENATE

S.B. NO. 2971

TWENTY-FIRST LEGISLATURE,
2002

S.D. 2

STATE OF HAWAII

A BILL FOR AN ACT

RELATING TO ALIEN INVASIVE SPECIES.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF HAWAII:

SECTION 1. The Hawaii Revised Statutes is amended by adding a new chapter to be appropriately designated and to read as follows:

CHAPTER INVASIVE SPECIES

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(3) Provide other statutory means to facilitate the administration of the State's efforts to control invasive species.

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(b) The administrator/coordinator shall be appointed by the governor subject to confirmation by the senate; provided that the governor shall select an administrator/coordinator from a list submitted by a nominating committee. The nominating committee shall be comprised of three individuals chosen as follows: one person appointed by the governor; one person appointed by the president of the senate; and one person appointed by the speaker of the house of representatives. The committee shall solicit applications and send to the governor the names of at least three nominees. The committee shall serve without compensation and serve at the pleasure of the appointing authority.

(c) The administrator/coordinator shall serve a term of four years, shall be appointed without regard to chapter 76, and compensated at a salary level set by the nominating committee with approval by the governor. The administrator/coordinator may request staff assistance from the office of the governor and other appropriate agencies. The administrator/coordinator may also employ, without regard to chapter 76 and at the administrator/coordinator's pleasure, hire and dismiss such persons as the administrator/coordinator finds necessary for the purposes of this chapter and fix their compensation accordingly.

(d) The administrator/coordinator shall:

(1) Maintain a broad overview of the invasive species problem in the State;

(2) Advise, consult, and coordinate invasive species related efforts with and between the departments of agriculture, land and natural resources, health, and transportation, and other agencies;

(3) Identify and prioritize each lead agency's organizational and resource shortfalls with respect to invasive species;

(4) After consulting with appropriate state agencies and the advisory body under section -3, create and implement a plan that includes the prevention, early detection, rapid response, control, enforcement, and education of the public with respect to invasive species, as well as fashion a mission statement articulating the State's position against invasive species;

(5) Coordinate and promote the State's position with respect to federal issues including:

- (A) Coordinating efforts with federal agencies to maximize resources and reduce or eliminate system gaps and leaks; and
 - (B) Coordinating efforts and issues with the federal Invasive Species Council and its National Invasive Species Management Plan;
- (6) Identify and record all invasive species present in the State and designate the department of agriculture, health, or land and natural resources as the lead agency for each invasive species identified;
 - (7) Identify all state, federal, and other moneys expended for the purposes of the invasive species problem in the State;
 - (8) Identify all federal and private funds available to the State to fight invasive species and advise and assist state departments to acquire these funds;
 - (9) Advise the governor and legislature on budgetary and other issues regarding invasive species;
 - (10) Provide annual reports to the legislature twenty days prior to every legislative session on budgetary and other related issues;
 - (11) Include the counties in the fight against invasive species to increase resources and funding and to address county-sponsored activities that involve invasive species;
 - (12) Review the fines and penalties structure to insure maximum deterrence for invasive species related crimes;
 - (13) Conduct invasive species research to improve eradication efforts;
 - (14) Suggest appropriate legislation to improve the State's administration of invasive species programs and policies; and
 - (15) Any other function necessary to effectuate the purposes of this chapter.

§ -3 Advisory body. The administrator/coordinator may appoint a local advisory body to advise and assist the administrator/coordinator in coordinating activities to fight invasive species. The body shall be comprised of representatives of state and private members. Representatives of federal agencies shall be asked to participate; or the administrator/coordinator may seek the advice and assistance of an established organization whose purpose is to coordinate invasive species activities. The administrator/coordinator shall meet with the body or organization at least quarterly. If the administrator/coordinator does not appoint or select an advisory body or organization, then the administrator/coordinator shall conduct quarterly public hearings to gain public input on current issues of concern. The administrator/coordinator shall also meet at least semi-annually with the chairpersons of the board of agriculture and board of land and natural

resources and the directors of health and transportation to gain input and to keep them abreast of current issues.

§ -4 Lead agency; duties. A state department that is designated a lead agency under section - 2(d)(6) with respect to a particular species, shall have sole administrative responsibility and accountability for that designated invasive species. The lead agency shall:

- (1) Coordinate all efforts between other departments and federal and private agencies to control or eradicate the designated invasive species;
- (2) Prepare a biennial budget proposal for the legislature and invasive species administrator/coordinator forty days before the convening of the regular session of the legislature in each odd-numbered year, showing the budget requirements of each of the lead agency's assigned invasive species that includes the budget requirements of all departments that it leads for that species as well as other federal and private funding for that invasive species;
- (3) Prepare and distribute an annual progress report forty days prior to the convening of each regular session of the legislature to the governor, legislature, and the invasive species administrator/coordinator that includes the status of each assigned invasive species with respect to its control or eradication; and
- (4) Any other function of a lead agency necessary to effectuate the purposes of this chapter.

§ -5 Authority to enter premises; departments of agriculture, health, and land and natural resources. Notwithstanding any other law to the contrary, and in addition to any other authority provided by law that is not inconsistent with the purposes of this chapter, the departments of agriculture, health, and land and natural resources and each department's agents, pursuant to this chapter, are authorized to examine, control, and eradicate all instances of invasive species identified as such by the invasive species administrator/coordinator under section -(2)(d)(6) on any public or private premises or in any aircraft or vessel landed or docked in waters of the State.

§ -6 Private property. (a) Whenever any invasive specie identified by the invasive species administrator/coordinator under section -(2)(d)(6) is found on private property, the departments of agriculture, health, or land and natural resources, as the case may be, may enter such premises to control or eradicate the invasive species after reasonable notice is given to the owner of the property and pursuant to the court order in subsection (d).

(b) If applicable, a duplicate of the notice so given shall be left with one or more of the tenants or occupants of the premises. If the premises are unoccupied, notice shall be mailed to the last known place of residence of the owner if residing in the State. If the owner resides out of the State or cannot be reached with notice speedily, notice left at the house or posted on the premises shall be sufficient.

(c) The appropriate department may instead cause notice to be given, and order the owner to control or eradicate the invasive species at the owner's expense within such reasonable time as the department may deem proper, pursuant to the notice requirements of this section.

(d) If the owner thus notified fails to comply with the order of the appropriate department, or its agent, within the time specified by the department, the department or its agent may apply to the district court of the circuit in which the property is situated for a warrant, directed to any police officer of the circuit, commanding the police officer to take sufficient aid, and, being accompanied by the department, between the hours of sunrise and sunset, execute measures to control or eradicate the invasive species.

(e) A department may recover by appropriate proceedings the expenses incurred by its order from any owner, who, after proper notice has failed to comply with the department's order.

(f) In no case shall the department or any officer or agent thereof be liable for costs in any action or proceeding that may be commenced in pursuance of this chapter.

§ -7 State or county property. (a) Whenever any invasive species identified by the invasive species administrator/coordinator under section -2)(d)(6) is found on state or county property or on a public highway, street, lane, alley, or other public place controlled by the State or county, notice shall be given by the departments of agriculture, health, or land and natural resources, or its agent, as the case may be, to the person officially in charge thereof, and the person shall be reasonably notified and ordered by the department to control or eradicate the invasive species.

(b) In case of a failure to comply with the order, the mode of procedure shall be the same as provided in case of private persons in section -6.

§ -8 Rulemaking. The administrator/coordinator may adopt rules pursuant to chapter 91 to effectuate this chapter."

SECTION 2. Act 4, Third Special Session, Session Laws of Hawaii 2001, is amended by amending sections 2 and 3 to read as follows:

"SECTION 2. There is established the emergency environmental workforce to be attached to The Research Corporation of the University of Hawaii for administrative purposes[-] and headed by the administrator/coordinator for invasive species. The emergency environmental workforce shall:

(1) Employ approximately four hundred to four hundred fifty individuals who were terminated from their jobs after the September 11 tragedy as a result of the local economic downturn. The individuals shall be employed as three-month contract employees;

(2) Deploy contract employees to all island mayors certifying a need for environmental clearance and eradication services to supplement current services being provided for the isolation of

dengue fever, the eradication of the miconia plant, fireweed, and other invasive plants, and the reduction of coqui frog and fire ant populations; and

(3) Coordinate its efforts with the efforts of the invasive species committee on each island.

SECTION 3. The administrator/coordinator for invasive species shall utilize the resources of the Research Corporation of the University of Hawaii and shall:

(1) Together with the Pacific Cooperative Studies Unit, develop a planning, administration, implementation, and evaluation strategy, including a program duration plan and a budget for contract and administrative expenses for the sum appropriated;

(2) Consult with private employers [~~with workforces, which have, or which may be, affected by layoffs from the economic downturn as a result of the September 11 tragedy~~] to develop a recruitment and public information plan;

(3) Develop a strategy for the interviewing and selection of program participants;

(4) Work with island mayors requesting cleaning and eradication services to administer physical examinations, as may be necessary, to qualifying applicants prior to final contract offers;

(5) Request that the attorneys employed or retained by the University of Hawaii prepare the necessary employment contracts to meet the objectives of the program on an expedited basis;

(6) Submit review and assessment reports to the governor, the senate president, and the house speaker every sixty days for the duration of the program; and

(7) Undertake all other necessary activities for program development and implementation."

SECTION 3. The administrator/coordinator for invasive species established by section 1, also shall administer and head the emergency environmental workforce established by Act 4, Session Laws of Hawaii, Third Special Session of 2001.

SECTION 4. There is appropriated out of the general revenues of the State of Hawaii the sum of \$ _____, or so much thereof as may be necessary for fiscal year 2002-2003, to effectuate the purposes of this Act.

SECTION 5. The sum appropriated in this part shall be expended by the office of the governor for the exclusive purposes of this part.

SECTION 6. Statutory material to be repealed is bracketed and stricken. New statutory material is underscored.

SECTION 7. This Act shall take effect on July 1, 2002.

**Appendix 6
House Bill 2212**

Report Title:

Alien Invasive Species; State Administrator/Coordinator

Description:

Establishes a state invasive species administrator/coordinator and authorizes the departments of agriculture, health, and land and natural resources to enter private property to control alien invasive species. (SD2)

HOUSE OF REPRESENTATIVES

H.B. NO. 2212

TWENTY-FIRST LEGISLATURE,
2002

H.D. 1

STATE OF HAWAII

S.D. 2

A BILL FOR AN ACT

RELATING TO ALIEN INVASIVE SPECIES.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF HAWAII:

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(d) If the owner thus notified fails to comply with the order of the appropriate department, or its agent, within the time specified by the department, or if entry is denied after notice is given pursuant to subsection (a) and, if applicable, subsection (b), the department or its agent may apply to the district court of the circuit in which the property is situated for a warrant, directed to any police officer of the circuit, commanding the police officer to take sufficient aid and to assist the department member or its agent in gaining entry onto the premises, between the hours of sunrise and sunset, and executing measures to control or eradicate the invasive species.

(e) A department may recover by appropriate proceedings the expenses incurred by its order from any owner, who, after proper notice has failed to comply with the department's order.

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SECTION 4. The administrator/coordinator for invasive species established by section 1, also shall administer and head the emergency environmental workforce established by Act 4, Session Laws of Hawaii, Third Special Session of 2001.

SECTION 5. There is appropriated out of the general revenues of the State of Hawaii the sum of \$1, or so much thereof as may be necessary for fiscal year 2002-2003, to effectuate the purposes of this Act.

SECTION 6. The sum appropriated in this part shall be expended by the research office of the University of Hawaii for the exclusive purposes of this part.

SECTION 7. Statutory material to be repealed is bracketed and stricken. New statutory material is underscored.

SECTION 8. This Act shall take effect on July 1, 2002.